ERRING REVISION OF THE BINET-SIMON TESTS

EXAMINATION MANUAL: FORM A

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HERRING REVISION

OF THE

BINET-SIMON TESTS

EXAMINATION MANUAL: FORM A

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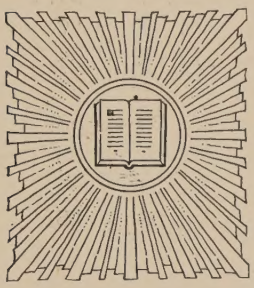

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CONTENTS

PAGE

INTRODUCTORY 3
NATURE OF THE EXAMINATION 3
DIRECTIONS FOR ADMINISTERING 4
DIRECTIONS FOR SCORING 5
DIRECTIONS FOR RECORDING 6
TESTS [1] 7–51

PAGE

1. Interpretation of Pictures. 7
2. Number Series Completion 16
3. Reproduction of Thought. 17
4. Digits Backward 18
5. Parts of Body 20
6. Repetition of Syllables ... 20
7. Size Comparisons 21
8. Æsthetic Discrimination .. 22
9. Naming Colors 24
10. Problematic Situations 24
11. Reproduction of Thought. 25
12. Definition of Abstract Words 25
13. Reproduction of Thought. 26
14. Problematic Situations ... 28
15. Absurdities 29
16. Sentence Building 30
17. Rhymes 30
18. Similarities 31
19. Proverbs 31

PAGE

20. Reproduction of Thought. 32
21. Mixed Sentences 33
22. Problem Reading 34
23. Repetition of Syllables ... 36
24. Following Directions 36
25. Following Directions 38
26. Similarities 39
27. Generalization 40
28. Comprehension 41
29. Sentence Completion 42
30. Problem Reading 43
31. Naming Objects 45
32. Form Comparison 47
33. Commissions 48
34. News Route 48
35. Digits Forward 49
36. Repetition of Syllables ... 49
37. Roast 50
38. Code 51

STANDARDIZED ANSWERS 53–56

[1] These test titles do not indicate at all what psychological functions are tested; indeed, many of them are definitely misleading in this particular. They have been selected as a convenient means of designating the different tests. Their significance, in the mind of the examiner, should be confined to this function.

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EXAMINATION MANUAL: FORM A

INTRODUCTORY

MEASUREMENT of the results of teaching is a widespread practice, but this measurement by itself is insufficient, because, while it tells how well a child is doing in arithmetic, reading, and other school subjects, it does not tell how well he can do. We need to know both things. Educational examinations tell us how much a child has accomplished; intelligence examinations tell us how much a child can accomplish. The difference between the two is the child's unused margin of ability. It is not difficult to measure this margin of unused ability, but it can no more be measured without an intelligence examination, than it can without educational examinations. Hence the importance of obtaining both measures.

It would be shameful to allow another generation of children to pass through school unmeasured; with so many children and so few psychologists, teachers will have to accomplish this measurement. Public school teachers are as able to use individual examinations like the Herring-Binet, as they are to teach reading, and, if we consider merely the process of obtaining mental ages, certainly more so. See Terman, *Intelligence of School Children*, Chapter XIII, "Practical Suggestions for the Use of Mental Tests."

NATURE OF THE EXAMINATION

The Herring Revision of the Binet-Simon Tests is an individual examination for the purpose of measuring mental ability. The questions are asked and, for the most part, answered orally. The examination contains many tests similar to those in the Binet-Simon Tests, such as repeating digits, detecting similarities, interpreting pictures, etc. The final score in the examination is expressed, as is that of the Binet-Simon Tests, as a mental age. The mental age by the Herring Revision of the Binet-Simon Tests has the same meaning and significance as the mental age by the Stanford Revision of the Binet-Simon Tests.

The examination consists of thirty-eight tests. Each test consists of a short series of elements. A score in the examination as a whole is the sum of the scores obtained for the separate tests.

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Provision is made also for obtaining the mental age by the use of fewer than the thirty-eight tests which constitute the complete examination. Thus, a mental age may be obtained by administering:

Tests 1 to 4, called Group A,
Tests 1 to 13, called Group B,
Tests 1 to 22, called Group C,
Tests 1 to 31, called Group D, or
Tests 1 to 38, called Group E.

A table is given showing the mental age equivalents of each total score.

DIRECTIONS FOR ADMINISTERING

It is indispensable to know and to master painstakingly and in detail the defined procedure, and to allow oneself no exceptions. For examiners who cannot trust their verbal memories, it is better to become very familiar with the words and then to read them to each subject.

Before beginning to use the examination, read it over with close attention; administer it to some friend; or better, to some child whose mental age is already known; then study further the detail of the procedure, instructions, and scoring; then administer the examination to another examinee; study the details again and repeat. Follow instructions exactly and do nothing not required. Never vary the wording. If a child does not understand, do not simplify or explain except as specified in the instructions. Everything that is said to the child is printed in black-face type. Although the words should be spoken by the examiner verbatim, they should not be read in an unnatural manner. The rate should be not far from three words per second.

Give no help to children during, before, or after an examination. Never allow children to become familiar with the tests except so far as this cannot be avoided in their use. Give the examination as if it were nothing unusual. Do not make any child feel that promotion or demotion may result. Win the confidence of each child. If the examination cannot be given under circumstances in which the child responds without restraint or embarrassment, postpone it. A knowledge of other general rules for using individual intelligence examinations may be readily acquired from Terman's *Measurement of Intelligence.*

Always begin with Test 1, follow at once with Tests 2, 3, and 4 in order, and then find the total score for these four (Group A). At the end of each group of tests are directions for the omission of certain tests in the additional material for the next group. These omissions are always governed by the score in Group A and include those tests in which the examinee is certain to make either a perfect score or a zero score. Full credit is given for the former and none for the latter. If a test which should be omitted is given, disregard the score and credit as if the directions had been followed. If a test which should have been given is omitted, go back and give it. If this is impossible, one recourse is to employ the estimate of mental age obtained from the longest completely given group. Each group includes all preceding groups.

Opposite the total score in the table of Mental Age Equivalents for Group A is found an estimate of mental age in months. This may be divided by the chronological age in months to find the Intelligence Quotient (IQ). For a chronological age above 16 years (192 months) divide the mental age in months by 192. For careful determination of a mental age the examiner will not stop with Group A but will administer Group B or C. Mental ages, which may be estimated on the basis of any group, have the same meaning as the Stanford-Binet Mental Ages, with which in the case of Groups C, D, and E they correlate 99 per cent in unselected age groups.

Such words as: "Explain, I don't understand," may be used to clarify ambiguous responses (but not to elicit a better response after a wrong one has been given), in tests such as 10, 12, 14, 15, 18, 19, 26, 27, 29. Directions may be repeated except in Tests 4, 6, 23, 33, 35, 36, 38. Time limits are imposed in 21, 29, 30, and 38. Observe these strictly.

One may be said to have learned to administer the Herring Revision when he can maintain a correlation of 0.97 with the Stanford Revision of the Binet-Simon Tests in unselected age groups (the Stanford should be given first, and the Herring not on the same day), or when he can obtain an average difference of about 4 points in IQ or less between the IQ's of the Stanford and of the Herring (or of two Herring-Binet examinations of the same children by two different examiners on different days).

DIRECTIONS FOR SCORING

In most of the tests the several elements are numbered. The score in a test is usually the number of elements correct. In Tests 11, 13, 20, 32, and 38 the score is one-half the number of elements correct. In Test 22 the score is twice the number of elements correct. The methods of scoring are exceptional in Tests 1, 27, 28, 29, and 30. The manner of scoring each test is indicated in the directions for that test. Samples of satisfactory and unsatisfactory answers are found in the Standardized Answers on pages 53 to 56.

DIRECTIONS FOR RECORDING

Before administering each examination, enter on an Individual Record Card the name of the examinee, grade, sex, and such other data as are called for. Enter the time of beginning and ending the examination in the spaces provided in the lower right-hand corner of the card. Indicate successes and failures in the parentheses by means of plus and minus signs; in Test 1 and similar tests, where more than one point may be given for a single response, record the number of points earned in each case. Enter the score for each test in the column headed "Score."

The examiner should, especially at first, record verbatim the answers to such tests as 1, 10, 14, 15, 18, and 26 in the spaces provided on the back of the card. These responses may be compared later with those in the Standardized Answers. Call a response right or wrong according as it more closely approximates in value a response there listed as right or one listed as wrong.

To find the total score in any group, add the scores of the tests constituting that group, by columns, and add the columns. Record the total score in the space provided.

The mental age equivalent may then be found in the appropriate table of mental age equivalents. Enter the mental age and chronological age in months in the parentheses below the name. Divide the MA by the CA (never using over 192 months as CA) and record the IQ.

Test 1. Interpretation of Pictures

"What is this picture about?"

Repeat the question each time if necessary. If there is no response, or if the response is unsatisfactory, say, **"Tell me what you see in this picture."**

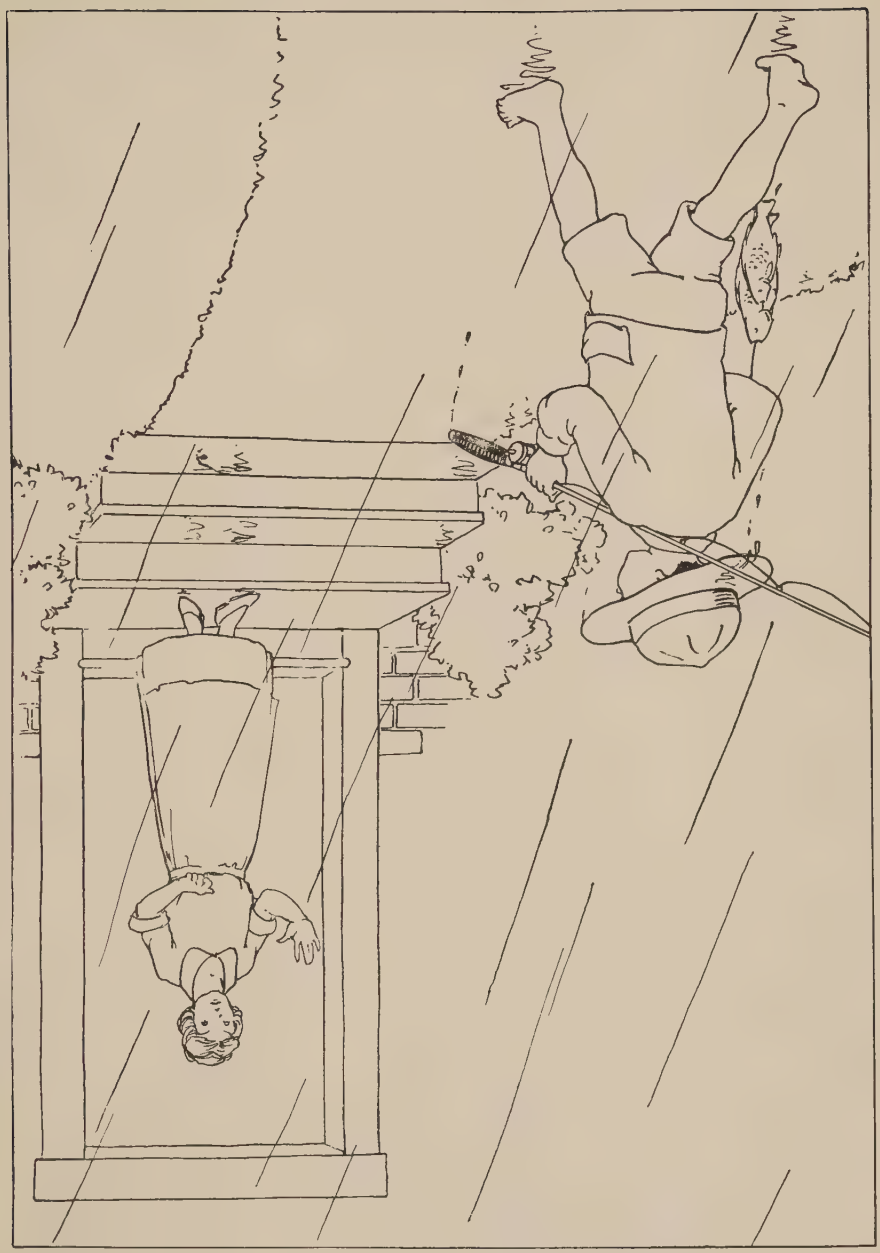
Score: Credit for each picture 1, 2, or 3 points according to the nature of the response, as follows. Credit

1 point if examinee enumerates merely,

2 points if any part of the response is clearly on the descriptive level,

3 points if any part of the response is clearly on the level of interpretation. (*See Standardized Answers.*)

Score: Sum of points credited in four pictures.
Maximum score: 12.



a.	9	8	7	6	—	—					
b.	40	30	20	—	—						
c.	4	8	16	32	—	—					
d.	3	4	5	2	3	4	1	2	3	—	—
e.	9	9	7	7	7	5	5	—	—		
f.	4	3	5	4	6	5	—	—			
g.	1	3	7	15	—	—					
h.	0	2	8	26	—	—					

Test 2. Number Series Completion

"In the first row of numbers tell me what *two numbers* should come next,—*here* and *here*. Go ahead."

"The next row." Etc.

See Key, page 19.
Score: Number of rows correctly completed.
Maximum score: 8.

Last winter a large river overflowed its banks near a small town. The water covered the streets and entered many of the houses. Fourteen persons were drowned. At least fifty persons caught colds because of the dampness and the cold weather.

Test 3. Reproduction of Thought

1. Last winter
2. a large river
3. overflowed its banks
4. near a small town.
5. The water covered the streets
6. and entered many of the houses.
7. Fourteen persons
8. were drowned.
9. At least
10. fifty persons
11. caught colds
12. because of the dampness
13. and the cold weather.

"Read this to yourself. Then begin at the beginning and tell me everything you have read."

If necessary, say, after the examinee has read the selection, **"Tell me everything you have read."** In all tests entitled "Reproduction of Thought," if the important idea of a numbered passage is reproduced, credit that passage even though the language is changed. In elements 7 and 10, the numbers fourteen and fifty must be exactly reproduced.

Score: Number of elements credited.
Maximum score: 13.

Test 4. Digits Backward

"I am going to read some numbers. When I am *through* say the numbers *backward*. If I say 9, 2, you say 2, 9. Do you understand?"

Read the digits at the rate of one digit per second. Repeat no series.

(2) 2, 8 6, 9 4, 3
(3) 1, 9, 4 3, 1, 8 6, 8, 5
(4) 5, 4, 1, 7 4, 8, 2, 7 2, 5, 3, 8
(5) 4, 5, 8, 3, 6 3, 7, 2, 9, 4 3, 6, 2, 9, 7
(6) 3, 6, 9, 8, 4, 1 4, 7, 2, 1, 8, 3 6, 4, 1, 5, 2, 7
(7) 5, 3, 9, 6, 2, 8, 4 3, 6, 1, 4, 7, 2, 5
5, 3, 9, 4, 1, 8, 6
(8) 6, 1, 4, 2, 3, 7, 8, 5 3, 8, 7, 4, 2, 6, 5, 1
7, 2, 6, 8, 4, 3, 7, 1
(9) 7, 2, 5, 3, 4, 8, 9, 6, 8 4, 9, 8, 5, 3, 7, 6, 2, 5
6, 1, 5, 7, 4, 2, 8, 3, 9

On each level there are three series of digits. Give only as many series on each level as are necessary to get one correct repetition. Stop with the first level on which no series is correctly repeated.

Score: Number of digits in longest successful series.
Maximum score: 9.

MENTAL AGE EQUIVALENTS FOR GROUP A

POINTS	M. A.	POINTS	M. A.	POINTS	M. A.	POINTS	M. A.	POINTS	M. A.
5	74	12	87	19	111	26	149	33	192
6	75	13	90	20	115	27	155	34	198
7	77	14	93	21	120	28	160	35	204
8	78	15	96	22	125	29	166	36	210
9	80	16	100	23	131	30	172	37	216
10	82	17	103	24	137	31	179	38	222
11	84	18	106	25	143	32	185	39	228

PROCEDURE FOR GROUP B

Group B consists of Group A and nine additional tests. It has a higher correlation with intelligence than Group A, and requires but little more time. The examinee's score in Group A is a very reliable index of his performance in some of the tests of Group B. The following table tells what tests of Group B are to be credited *but not given:*

Score in Group A	Credit in full but do not give Tests:	Total credit for these tests
10 to 15	5, 6	7
16 to 19	5, 6, 7	10
20 to 25	5, 6, 7, 8	14
26 to 41	5, 6, 7, 8, 9	17
42	5, 6, 7, 8, 9, 10	23

If the examinee scores 5 points or less in Group A, omit and *do not credit* Tests 12 and 13.

If the examinee scores 22 points or less in Group A, omit and *do not credit* Test 13.

Key for Test 2

a. 5, 4
b. 10, 0
c. 64, 128
d. 0, 1
e. 5, 3
f. 7, 6 or 4, 9
g. 31, 63
h. 80, 242

Test 5. Parts of Body

1. **"Show me your knee. Put your hand on your knee."**
2. **"Show me your fingers. Put one of your fingers here."**
3. **"Show me your ear. Put your hand on your ear."**
4. **"Show me your foot. Put your hand on your foot."**

If two or three repetitions of the instructions do not bring a response, point to the child's shoulder and say, **"Is this your knee?"** If no response is made, the score for this element is zero. If a negative response is made, say, **"Show me your knee."**

Score: Number of correct responses.
Maximum score: 4.

Test 6. Repetition of Syllables

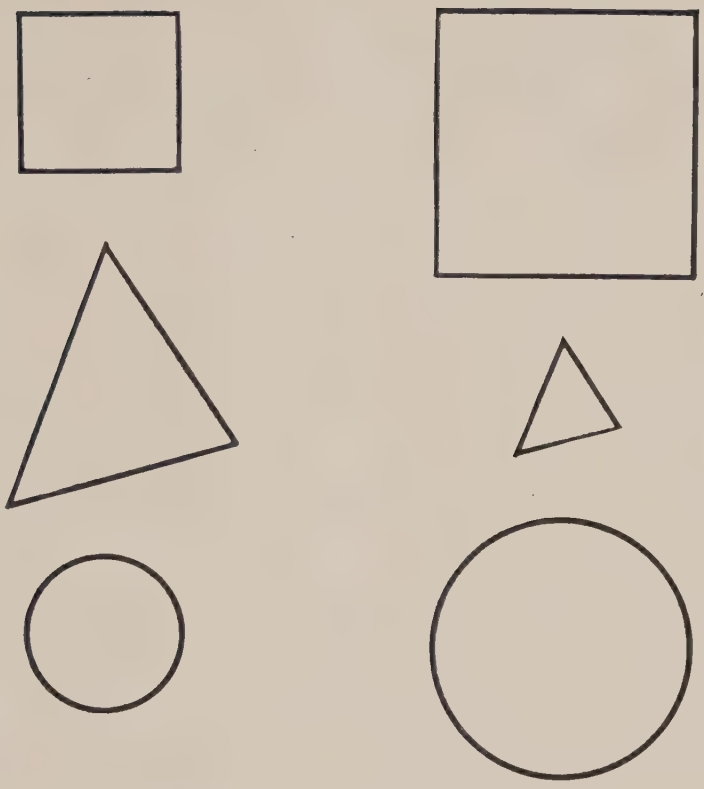
"Can you say 'Mother'?"

"Now say 'Nice kitty.'"

1. **"Now say 'I want some bread and butter.'"**
2. **"Now say 'In winter it is cold.'"**
3. **"Now say 'We go to bed at night.'"**

These sentences should be read by the examiner at the rate of 3 words per second. (This same rate is used in similar tests which follow.) Items "Mother" and "Nice kitty" are for practice only. Score only the three numbered sentences. Each sentence must be repeated verbatim to receive credit.

Score: Number of sentences repeated without alteration of wording.
Maximum score: 3.



Test 7. Size Comparisons

"See these squares? Which one is bigger?" Or, **"Put your finger on the biggest one."** Or, **"Show me the big one."**

If the child does not respond, say, **"Show me which square is the biggest."** Similarly with triangles and circles. Always cover the figures not yet shown with a sheet of opaque paper. A sheet of celluloid placed over the page will protect the figures from finger marks. Such a sheet should be used from the first, since a slight smudge or wear from erasing may suggest either a correct or an incorrect response.

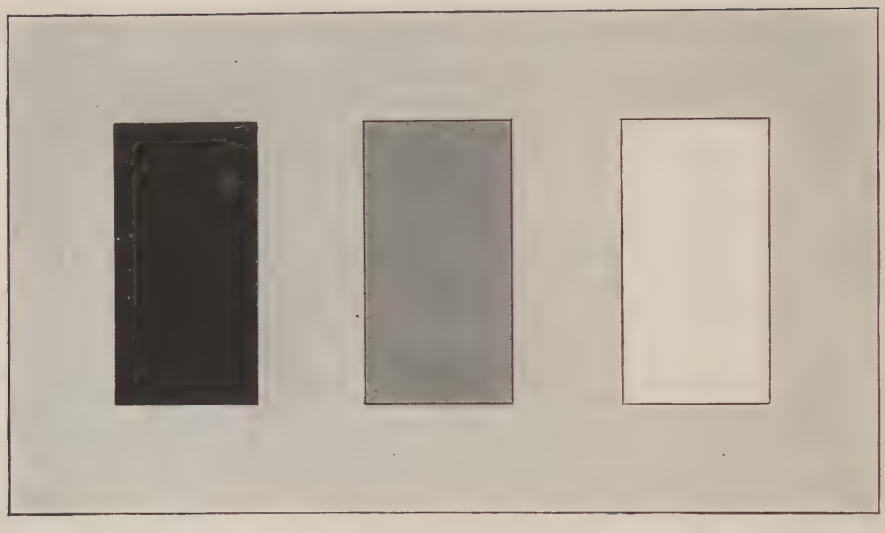
Score: Number of comparisons correctly made.
Maximum score: 3.

Test 8. Æsthetic Discrimination

"Which is prettier?"

Lay a sheet of celluloid over the page, begin with the pair at the top of the page, nearest the examinee, and hold a sheet of opaque paper over those pairs not yet shown, and if necessary over all but the one pair in use.

Score: Number of comparisons correctly made.
Maximum score: 4.



Test 9. Naming Colors

"What is the name of this color?"

Point to the colors in the order as above, beginning with black.

Score: Number of correct responses.
Maximum score: 3.

Test 10. Problematic Situations

"What's the thing for you to do:

1. "When you are lost and cannot find the way home?"
2. "If your lessons at school are too hard for you?"
3. "If the storekeeper does not have the things your mother sent you to buy?"
4. "If you have nothing to eat and nobody will give you focd or money?"
5. "When you have failed in something you would like to do?"
6. "Why can you not tell how *good* a man is by looking at his clothes?"

If necessary, say, "Explain, I don't quite understand."

Score: Number of elements credited.
Maximum score: 6.

In a little cottage on the banks of a river in France there lived a poor farmer and his wife. Their home was in a pleasant spot; behind it was a forest; in front was a huge beechnut tree. Under its branches there sat their daughter, a good and gentle girl, whose work it was to look after the sheep of her father's flock. Her name was Alice.

Test 11. Reproduction of Thought

1. In a little cottage
2. on the banks of a river
3. in France
4. there lived a poor farmer
5. and his wife.
6. Their home was in a pleasant spot;
7. behind it
8. was a forest;
9. in front
10. was a huge beechnut tree.
11. Under its branches
12. there sat their daughter,
13. a good and gentle girl,
14. whose work it was
15. to look after the sheep
16. of her father's flock.
17. Her name was Alice.

"Read this to yourself. Then begin at the beginning and tell me everything you have read."

Credit each numbered passage of which the important thought is reproduced.

Score: Number of elements credited, ***divided by 2.*** *If this is a mixed number, give the next higher whole number.*
Maximum score: 9.

Test 12. Definition of Abstract Words

"What does —— mean? What is —— ?"

1. obedience 2. hope 3. pride 4. culture 5. hostility 6. severity 7. prejudice

If the reply is ambiguous, say, **"I don't understand. Please explain what you mean."**

Score: Number of elements credited.
Maximum score: 7.

We may recapitulate by saying that the origin of thinking is some perplexity, confusion, or doubt. Thinking is not a case of spontaneous combustion; it does not occur just on "general principles." There is something specific which occasions and evokes it. General appeals to a child (or to a grown-up) to think, irrespective of the existence in his own experience of some difficulty that troubles him and disturbs his equilibrium, are as futile as advice to lift himself by his bootstraps.

Test 13. Reproduction of Thought

"Read this to yourself. Then begin at the beginning and tell me everything you have read."

1. We may recapitulate
2. by saying that the origin of thinking
3. is some perplexity, confusion, or doubt.
4. Thinking is not a case of spontaneous combustion;
5. it does not occur just on "general principles."
6. There is something specific
7. which occasions and evokes it.
8. General appeals to a child
9. (or to a grown-up)
10. to think
11. irrespective of the existence in his own experience of some difficulty that troubles him and disturbs his equilibrium,
12. are as futile as advice to lift himself by his bootstraps.

If the examiner feels that the examinee can still reproduce more, he may say, **"And what else?"** Mere verbal repetition which is evidently unaccompanied by understanding is not to be credited. This may be tested by saying, **"I do not understand what you mean. Explain what you mean."** Credit irrespective of order.

Score: Number of elements credited, ***divided by 2.***
Maximum score: 6.

The examinee's score in Group B is the sum of his scores in Tests 1 to 13, and *hence includes those of Group A.*

MENTAL AGE EQUIVALENTS FOR GROUP B

POINTS	M. A.	POINTS	M. A.	POINTS	M. A.	POINTS	M. A.	POINTS	M. A.
10	67	25	77	40	98	55	130	70	173
11	67	26	78	41	100	56	133	71	176
12	68	27	79	42	102	57	135	72	179
13	68	28	80	43	103	58	138	73	182
14	69	29	81	44	105	59	140	74	185
15	69	30	82	45	107	60	143	75	188
16	70	31	84	46	109	61	146	76	191
17	70	32	85	47	111	62	149	77	194
18	71	33	87	48	113	63	152	78	197
19	72	34	88	49	115	64	155	79	200
20	73	35	90	50	118	65	158	80	203
21	74	36	91	51	120	66	161	81	206
22	74	37	93	52	123	67	164	82	207
23	75	38	95	53	125	68	167	83	212
24	76	39	96	54	128	69	170	84	215

PROCEDURE FOR GROUP C

Score in Group A	Credit in full but do not give Tests:	Total credit for these tests
30 to 31	14	5
32 to 37	14, 15, 16	17
38 to 42	14, 15, 16, 17, 18	27

Score in Group A	Do not give or credit Tests:
0 to 5	19, 20, 21, 22
6 to 9	20, 21, 22
10 to 21	22

Test 14. Problematic Situations

1. "A little boy is coming into his home crying, and holding an empty paper bag with a hole in it. What has happened?"
2. "A man is holding to a big piece of wood in the ocean, many miles from land. What has happened?"
3. "A little boy is going home. The sun is shining and water is dripping from his cap, hair, and clothes. What has happened?"
4. "A little girl is crying. Her hands are muddy and have long, fresh scratches. Her nose, mouth, and chin are muddy, too. What has happened?"
5. "A big crowd has gathered around two automobiles on a busy street. The drivers are talking together and writing something. What has happened?"

No introductory statement is needed. Repeat if necessary.

Score: Number of elements credited.
Maximum score: 5.

Test 15. Absurdities

"Tell me what is foolish about this":

1. "A man said: 'All the money I have is *five dollars*. I am going to buy a house for my family and pay for it at once.' What is foolish about that?"
2. "A woman said: 'I shall have *five friends* at the dinner table tonight.' So she prepared the dinner table with four plates and four chairs. What is foolish about that?"
3. "A man said: 'I am going to ride in the street car. I must take *one hundred dollars* to pay the car fare.' What is foolish about that?"
4. "A man said: 'A thief is coming tonight to steal my money from my strongbox, so I will stay all night in my neighbor's house.' What is foolish about that?"
5. "A commander of a thousand men said: 'I am expecting *one* man, named Smith, to attack my camp tomorrow at noon. I must bring another thousand men to my camp to defend it.' What is foolish about that?"
6. "A man had only *twenty-five cents*. He spent *fifty cents* for dinner, *five dollars* for a new hat, and had *one dollar* left. What is foolish about that?"
7. "One man and two men are ten men. What is foolish about that?"
8. "A man was working by the light of ten strong electric lights. He said: 'I cannot see well enough. There is not enough light. I must take away these ten electric lights and bring in my candle.' What is foolish about that?"

Score: Number of elements credited.
Maximum score: 8.

Test 16. Sentence Building

"Make a sentence using the three words, ——, ——, and ——."

1. hen egg day
2. play boys fun
3. money doll children
4. ball happy play

If a child asks, say, "You may use other words, too."

Give credit only if there are no more than two independent clauses.

Score: Number of responses credited.
Maximum score: 4.

Test 17. Rhymes

"Tell me a word that *rhymes* with ——."

1. ball
2. map
3. bad
4. rim

If needed add, "A rhyme is a word that ends with the same sound as another word. Cat, rat, bat, rhyme together."

Score: Number of words for which a rhyme is given.
Maximum score: 4.

Test 18. Similarities

"In what way are —— alike?"

1. "a wheel, a penny, and the moon."
2. "a sling, a gun, and a pistol."
3. "ink, a pencil, and a pen."
4. "a star, the sun, and the moon."
5. "a cloud, steam, and ice."
6. "a stone, a nail, and a cannon."

Explain the meaning of any words about which the examinee inquires upon his own initiative, and of no others. To "They are not alike," say, *"Yes,* they *are* alike in some way. Tell me *how* they are alike."

Score: Number of elements credited.
Maximum score: 6.

Test 19. Proverbs

"A proverb tells some well-known truth. Here is a proverb: 'Every path has its puddle.' What does that mean?"

If the child fails, explain: "That means that no matter what we try to do, we are apt to find something hard or unpleasant in it."

"Here is another proverb": Read the proverb. "What does that mean?"

1. "Paddle your own canoe."
2. "The burnt child dreads the fire."
3. "Do not cry over spilt milk."
4. "Rome was not built in a day."
5. "Don't shout until you are out of the woods."

(Pronounce "burnt," "spilt," "paddle," and "puddle" distinctly.) If instead of an abstract reply another valid concrete illustration is given, credit. Literal interpretations are not accepted. If the examinee asks for the meaning of a word, give it.

Score: Number of elements credited.
Maximum score: 5.

Every fakir in India performs the trick of the mango tree—sometimes cleverly and sometimes crudely. For, remember, in magic it is not what but who that counts. It is merely a piece of sleight-of-hand substitution. A twig of the mango is substituted for the seed, a larger twig for the first one, and so on till the bush is there to behold.

Test 20. Reproduction of Thought

1. Every fakir
2. in India
3. performs the trick
4. of the mango tree—
5. sometimes cleverly
6. and sometimes crudely.
7. For, remember, in magic it is not what but who that counts.
8. It is merely a piece of sleight-of-hand substitution.
9. A twig of the mango
10. is substituted
11. for the seed,
12. a larger twig for the first one,
13. and so on till the bush is there to behold.

"Read this to yourself. Then begin at the beginning and tell me everything you have read."

Say, if necessary, **"And what else?"** No credit for mere verbal repetition where content is not evidently understood.

Score: Number of elements credited ***divided by 2.***
Maximum score: 7.

1. is to without too work ten stopping hours long

2. much who sick those too often eat become

3. water wood time a of some last kinds long under

Test 21. Mixed Sentences

"This sentence (pointing) **has the words all mixed up so that they do not make any sense. How should the sentence read?"**

If examinee does not respond in one minute, point to next sentence and repeat, **"*This* sentence,"** etc.

Score: Number of elements credited.
Maximum score: 3.

First I walked 5 blocks west,
then 3 blocks south,
then 4 blocks east,
then 1 block south,
and then 1 block east.
How far was I from where I started?

First I walked 10 miles south,
then 15 miles north,
then 10 miles west,
then 17 miles east,
and then 5 miles south.
How far was I from where I started?

First I went 2 miles straight up in an airplane,
then 3 miles northeast,
then 2 miles southeast,
then 2 miles northwest,
then 2 miles straight down.
How far was I from where I started?

Test 22. Problem Reading

"Read this problem to yourself and then tell me the answer."

Score: ***Two points*** *for each correct response.*
Maximum score: 6.

The examinee's score in Group C is the sum of his scores in Tests 1 to 22, inclusive, and hence includes those of Group B.

MENTAL AGE EQUIVALENTS FOR GROUP C

POINTS	M. A.	POINTS	M. A.	POINTS	M. A.	POINTS	M. A.	POINTS	M. A.
8	65	33	79	58	99	83	132	108	170
9	66	34	80	59	100	84	133	109	172
10	66	35	81	60	101	85	135	110	173
11	67	36	82	61	102	86	136	111	175
12	67	37	83	62	103	87	138	112	176
13	68	38	83	63	104	88	140	113	178
14	68	39	84	64	105	89	141	114	180
15	69	40	85	65	106	90	143	115	181
16	69	41	86	66	107	91	144	116	183
17	70	42	86	67	108	92	146	117	184
18	70	43	87	68	109	93	147	118	186
19	71	44	88	69	111	94	149	119	187
20	71	45	89	70	112	95	150	120	189
21	72	46	89	71	113	96	152	121	190
22	72	47	90	72	115	97	153	122	192
23	73	48	91	73	116	98	155	123	193
24	74	49	92	74	118	99	157	124	195
25	74	50	93	75	119	100	158	125	197
26	75	51	94	76	121	101	160	126	198
27	75	52	94	77	122	102	161	127	200
28	76	53	95	78	124	103	163	128	201
29	77	54	96	79	125	104	164	129	203
30	77	55	97	80	127	105	166	130	204
31	78	56	97	81	129	106	167	131	206
32	79	57	98	82	130	107	169	132	207

PROCEDURE FOR GROUP D

Score in Group A	Credit in full but do not give Tests:	Total credit for these tests
26 to 31	23	4
32 to 42	23, 24, 25, 26	15

Score in Group A	Do not give or credit Tests:
0 to 9	28, 29, 30
10 to 18	29, 30

Test 23. Repetition of Syllables

"Listen carefully and say after me *just* the *same words* that I say. Ready."

1. "We do not go to school every month of the year."
2. "In winter, boys and girls like to make snowballs."
3. "It takes a very long time to learn to add numbers."
4. "Water freezes in winter, and ice melts in summer."

Score: Number of sentences repeated without alteration of wording.
Maximum score: 4.

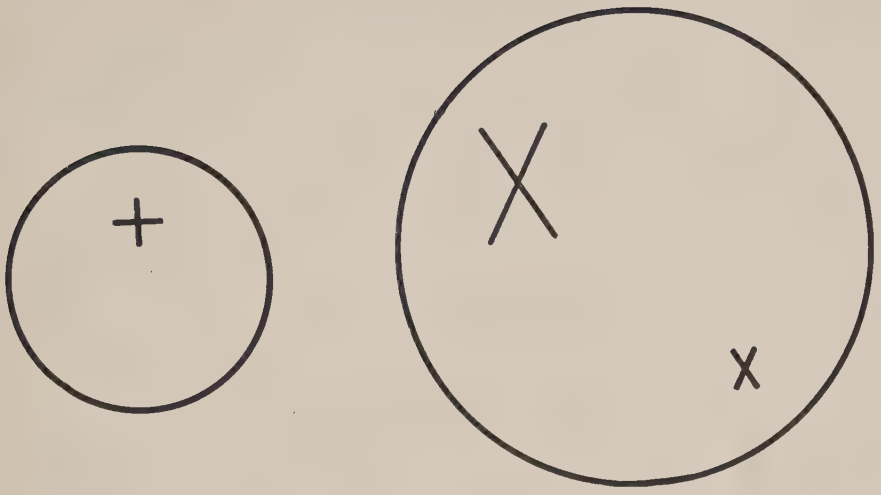
Test 24. Following Directions

Place a sheet of celluloid over the drawings and say:

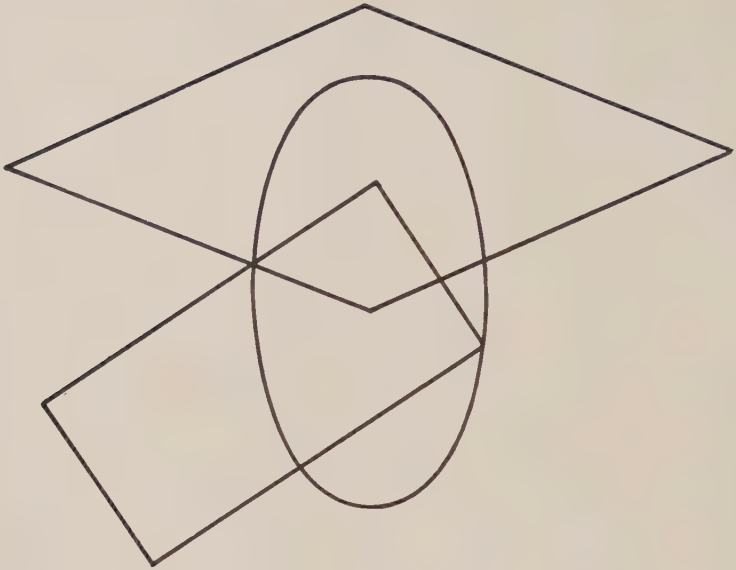
1. "Put your finger so that it will cover the cross in the small circle."
2. "Now put it just to the left of the small cross in the large circle."
3. "Now put it just to the right of the large cross in the large circle."

Give the three directions in order without repetition.

Score: Number of elements credited.
Maximum score: 3.



Key for Test 22
4, 7, 3



Test 25. Following Directions

Place the celluloid over the drawings and say:

"Put one finger so it will be:

1. **In the diamond and in the oval at the same time, but not in the rectangle."**

"Now put it so it will be:

2. **In the rectangle, but not in the diamond or oval."**
3. **In the diamond, but not in the oval or rectangle."**
4. **In the rectangle, in the oval, and in the diamond, all at the same time."**

If the examinee shows initiative by asking which is the diamond, etc., he is told. If not, he is allowed to fail.

Give each direction without repetition. A finger placed upon the periphery of a figure is counted in the figure.

Score: Number of elements credited.
Maximum score: 4.

Test 26. Similarities

"In what way are —— alike?"

1. **"A baseball and an orange?"** 2. **"Wood and paper?"**
3. **"Rain and milk?"** 4. **"A bed and a chair?"**

If necessary, say: **"No; tell me in what way —— and —— are *alike*."**

Score: Number of elements credited.
Maximum score: 4.

Drinking the sea dry.
Catching the wind in a net.
Gathering grapes from thistles.
Touching the end of a rainbow.

Test 27. Generalization

"These four sayings all have just the same meaning. What is that meaning?"

(May be read to examinee who cannot read them himself. Be sure examinee reads all four before responding.)

Score: 5 points for a satisfactory answer, none for an unsatisfactory answer.
Maximum score: 5.

"I sprang to the stirrup, and Joris and he:
I galloped, Dirk galloped, we galloped all three."

Test 28. Comprehension

"Read these two lines to yourself, and then tell me *who* is meant by the word 'he' at the end of the first line."

Score: 3 points for the correct response, none for an incorrect one.
Maximum score: 3.

Many —— are —— —— ——.

A piece of lead will drop to the bottom of the ocean.

A cubic inch (about a tablespoonful) of water weighs less than half an ounce; a cubic inch of brass weighs over 2 ounces.

A penny will sink to the bottom of a puddle.

A cup of water of the same size.

A cup of pure gold dust weighs nearly 20 times as much as

Iron nails will not float.

Test 29. Sentence Completion

"All these sentences taken together have one meaning. Read them to yourself and then tell me what words you would put in these 4 blanks to show what that meaning is. You may use just 4 words, one for each blank. Do you understand?"

If examinee does not respond satisfactorily within 2 minutes, say: **"Tell me what the meaning is."**

Score: 5 points for correctly filling blanks;
3 points for merely telling meaning;
0 points for failure.
Maximum score: 5.

John said: "I heard my clock strike yesterday, ten minutes before the first gun fired. I did not count the strokes, but I think it struck more than once and I am sure it struck an odd number." John was out all the morning, and his clock stopped at four fifty-five (five minutes to five) the same afternoon. When do you think the first gun fired?

Test 30. Problem Reading

"Read this to yourself. Then answer the question at the end."

If the examinee does not respond correctly within 2 minutes, the score is zero.

Score: 5 points for correct response, none for incorrect response. Maximum score: 5.

The examinee's score in Group D is the sum of his scores in Tests 1 to 30, inclusive, and hence includes those of Group C.

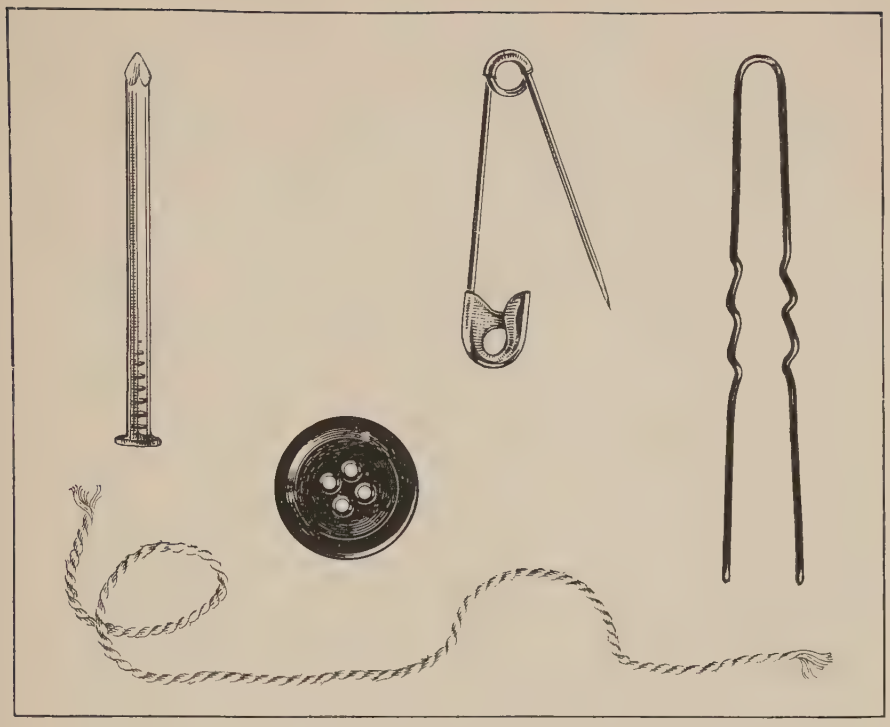
MENTAL AGE EQUIVALENTS FOR GROUP D

POINTS	M. A.	POINTS	M. A.	POINTS	M. A.	POINTS	M. A.	POINTS	M. A.
20	70	49	86	78	107	107	138	136	178
21	70	50	87	79	107	108	139	137	179
22	71	51	88	80	108	109	141	138	181
23	71	52	88	81	109	110	142	139	182
24	72	53	89	82	110	111	144	140	184
25	72	54	89	83	111	112	145	141	185
26	73	55	90	84	112	113	147	142	186
27	73	56	91	85	113	114	148	143	188
28	74	57	91	86	114	115	149	144	189
29	75	58	92	87	115	116	151	145	190
30	75	59	92	88	116	117	152	146	192
31	76	60	93	89	117	118	153	147	193
32	76	61	94	90	118	119	155	148	195
33	77	62	94	91	119	120	156	149	196
34	78	63	95	92	120	121	157	150	197
35	78	64	96	93	121	122	159	151	199
36	79	65	96	94	122	123	160	152	200
37	79	66	97	95	123	124	162	153	201
38	80	67	98	96	125	125	163	154	203
39	80	68	99	97	126	126	164	155	204
40	81	69	100	98	127	127	166	156	205
41	82	70	100	99	128	128	167	157	207
42	82	71	101	100	129	129	168	158	208
43	83	72	102	101	130	130	170	159	210
44	83	73	102	102	131	131	171	160	211
45	84	74	103	103	133	132	173	161	212
46	85	75	104	104	134	133	174	162	214
47	85	76	105	105	135	134	175	163	215
48	86	77	106	106	137	135	177	164	216

PROCEDURE FOR GROUP E

Score in Group A	Credit in full but do not give Tests:	Total credit for these tests
10 to 15	31	5
16 to 29	31, 32	10
30	31, 32, 33	14

Score in Group A	Omit and *do not* credit Tests
4 to 9	36, 37, 38



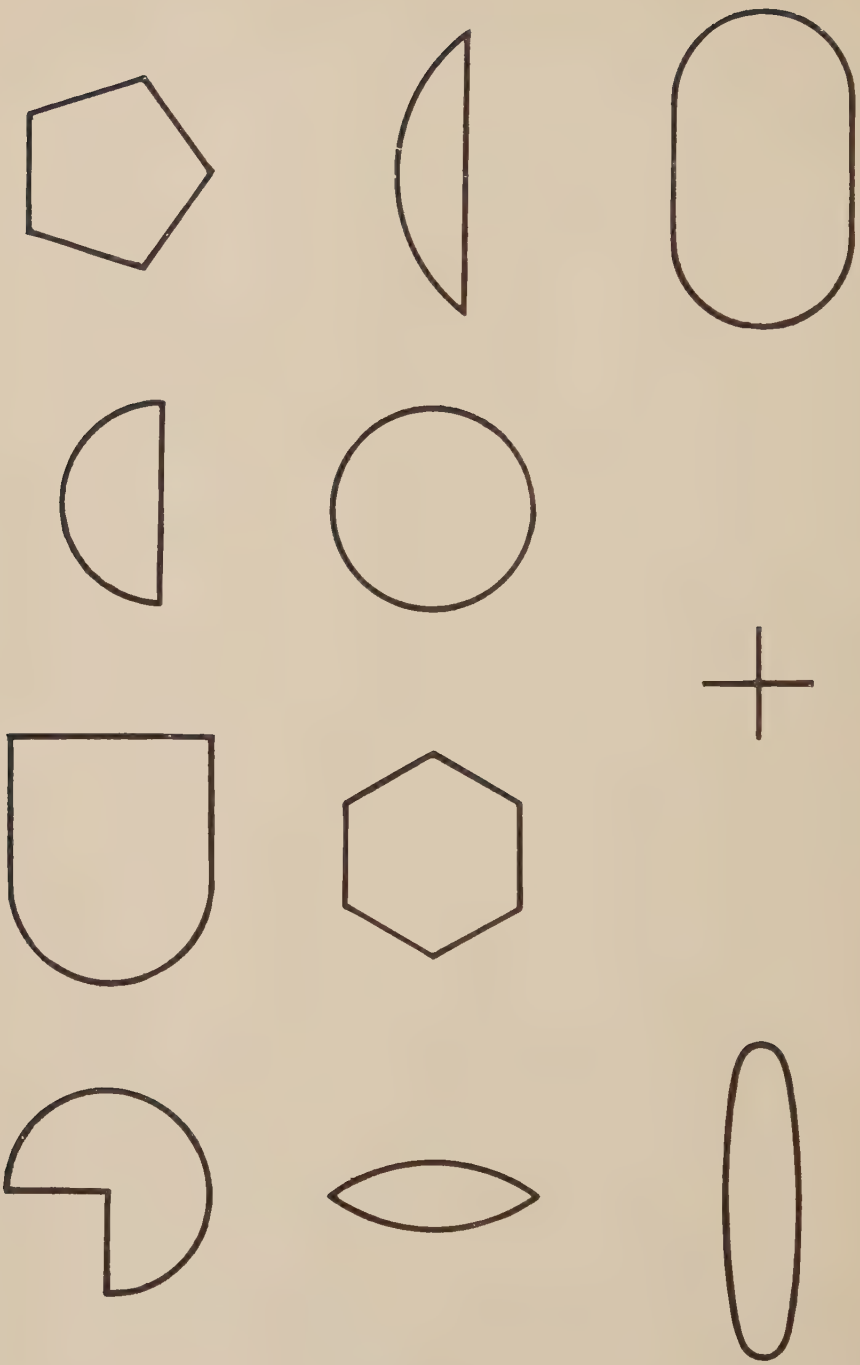
Test 31. Naming Objects

Point to each of the objects above and say,
"What is this? Tell me what this is."

For this test the examiner should procure the following articles: Piece of common white grocer's twine, 6 inches long; common black coat button; wire hairpin; six-penny wire nail (2 inch); safety pin, 1½ inches long.

These objects have been standardized and should conform to the description above. It will be found convenient to mount the objects on white cardboard in the manner shown in the drawing above, and paste them into the book just over the drawing. In order to protect the opposite page, the cardboard may be made double length, folded to cover the objects and pasted with the fold at the right. It is probable that if the test is administered by using the pictures instead of the objects the results will be reasonably satisfactory, but this has not been determined.

Score: Number of objects properly named.
Maximum score: 5.



Test 32. Form Comparison

Have at hand the set of drawings on small pieces of cardboard similar to those on the opposite page. Turn the book sidewise so that the figures are nearest the examinee. Place the circle of the duplicate set on the cross and say,

"Show me one like this."

Follow with the others, in the order indicated by the numbers on the back, placing each form on the cross so it will have the same orientation as the corresponding form on the page.

If the child does not respond at first, say, **"Do you see all these things? Now find me another one just like this."**

If the first response is an error, say, **"No, find one like this."** Make no further corrections.

In each case the card should be held in place by the examiner so that the subject cannot move it about.

Score: Number of forms correctly indicated, ***divided by 2.*** *If this is a mixed number, give the next higher whole number. Maximum score: 5.*

Test 33. Commissions

Material needed: penny, nickel, sheet of paper.

"Now I want you to do something for me. *First,* put this penny on one of the corners of this desk (or table), *then* take this five-cent piece and put it on that chair; and *then* put this piece of paper under the penny on the desk (or table). Go ahead."

Be sure you have the child's attention, then speak somewhat slowly and impressively. Emphasize the words italicized and pause after each one. Repeat nothing.

Score one point for each of the three commissions correctly executed, and one point for correct order.
Maximum score: 4.

Test 34. News Route

Place the diagram found on the Individual Record Card before the examinee so that the arrow points toward his left, and say (indicating houses, doors, and streets when each is first mentioned),

"Here are seven houses. Here is one door and here is another door, and all these are doors. Here is a street between these two houses, and here is another street, and all these are streets. Now suppose you have to take a newspaper to every door. I want you to mark out a path to show me just how you would go. *Begin* at the *arrow"* (pause, but no longer point), ***"stop at every door"*** (pause), **"and mark out the *shortest path you can.* Take the streets in order. Go ahead."**

Then give the examinee a pencil, placing the point at the arrow.

If examinee skips a door, say once only, **"You must stop at every door."** If the examinee starts to enter a house, say, **"No, you must not go into the houses."**

Spontaneous correction by the examinee is allowed.

Score one point for each street correct. A street is correct if the shortest possible path is marked out in it, beginning at either end. See Standardized Answers.

Maximum score: 6.

Test 35. Digits Forward

"I am going to read some numbers. When I am through, say them over just as I do."

Read the following digits at the rate of one digit per second. If the child does not respond to the first series, say, "Say 6, 8." On each level there are three series of digits. Give only as many series on each level as necessary to get one correct repetition. Stop with the first level on which no series is correctly repeated. Repeat no series. In reading the digits avoid all rhythm or grouping; merely let the voice fall at the end.

(2) 6, 8 2, 9 4, 7

(3) 7, 9, 1 2, 5, 8 3, 6, 4

(4) 5, 8, 4, 1 3, 9, 6, 5 7, 1, 5, 9

(5) 2, 1, 6, 4, 8 5, 1, 4, 9, 6 8, 9, 2, 5, 7

(6) 2, 8, 5, 7, 3, 6 4, 1, 3, 8, 5, 7 1, 6, 4, 7, 9, 2

(7) 1, 9, 7, 2, 3, 1, 8 7, 6, 1, 8, 3, 5, 4 9, 8, 6, 1, 2, 9, 7

(8) 2, 8, 9, 5, 7, 3, 6, 8 5, 3, 9, 1, 6, 4, 8, 2
8, 6, 3, 9, 2, 5, 7, 1

(9) 5, 7, 3, 1, 7, 9, 4, 2, 5 6, 8, 3, 9, 1, 2, 6, 3, 7
9, 6, 8, 2, 1, 4, 8, 3, 5

(10) 1, 7, 4, 6, 2, 5, 3, 8, 6, 1 3, 1, 2, 7, 4, 6, 3, 8, 5, 7
2, 7, 5, 8, 4, 1, 7, 2, 4, 9

Score: Number of digits in the longest successful series.
Maximum score: 10.

Test 36. Repetition of Syllables

"Listen carefully and when I am through, say *just* the *same words* that I say.

1. 'The brook runs by the house and sings a pleasant song to all who wish to listen.'

"Listen again and when I am through, say just the same words I do.

2. 'After eating a good dinner, cats like to lie in the warm sun and sleep by the hour.'

3. 'Girls like to play with dolls more than boys do, but I have a number of boy friends who also like dolls.' "

Score: Number of elements credited.
Maximum score: 3.

One pound of meat should roast ——
Two pounds of meat should roast three-quarters of an hour.
Three pounds, one hour.
Four pounds ——
Five pounds ——
Eight pounds, two and one-quarter hours.
Nine pounds, two and one-half hours.
Eleven pounds ——
Twelve pounds ——

Test 37. Roast

"Read this to yourself and then tell me what you would put in each blank."

Score: Number of elements correctly completed.
Maximum score: 5.

Test 38. Code

"These diagrams contain all the letters of the alphabet. Examine the arrangement of the letters. They go (point), a b c d e f g h i j k l m n o p q r s t u v w x y z, and there is no letter here. The letters of each line of each diagram read from left to right, so: a b c, then d e f, then g h i, and then j k l, and so forth. These lines (point) of this diagram slant this way (point), these lines (point) of this diagram go straight up and down (point), and these lines of this diagram slant so (point).

"Now all this represents a code, a secret language. It is like one that was used in the Civil War to send secret messages. This is the way it works. We draw the lines that hold a letter, but leave the letter out. Here is the way we write 'enemy.' (Illustrate.) Here is the way we write 'taken.' Did I make any mistakes? (Pause while child examines.)

"I want you to write something for me without looking at the code. Remember how the letters go, first (point) a b c d e f g h i, then j k l m n o p q r, and then s t u v w x y z, and no letter here. Don't forget that these lines slant so, these go straight up and down, and these slant so (point)."

Take code away and ask subject to write "*push forward*" in the space provided on the Individual Record Card. Watch to see that the subject does not draw designs.

Time limit: 5 minutes.
Score: Number of letters correctly made, ***divided by 2.***
Maximum score: 6.

Mental Age Equivalents for Group E

POINTS	M. A.	POINTS	M. A.	POINTS	M. A.	POINTS	M. A.	POINTS	M. A.	POINTS	M. A.
7	51	40	71	73	88	106	113	139	145	172	186
8	52	41	71	74	89	107	114	140	146	173	187
9	53	42	72	75	90	108	114	141	147	174	188
10	53	43	72	76	90	109	115	142	149	175	189
11	54	44	73	77	91	110	116	143	150	176	191
12	55	45	73	78	91	111	117	144	151	177	192
13	56	46	74	79	92	112	118	145	152	178	193
14	56	47	74	80	93	113	119	146	154	179	194
15	57	48	75	81	93	114	120	147	155	180	196
16	58	49	75	82	94	115	121	148	156	181	197
17	59	50	76	83	95	116	121	149	157	182	198
18	59	51	76	84	96	117	122	150	159	183	199
19	60	52	77	85	96	118	123	151	160	184	201
20	61	53	77	86	97	119	124	152	161	185	202
21	61	54	78	87	98	120	125	153	162	186	203
22	62	55	78	88	98	121	126	154	164	187	204
23	62	56	79	89	99	122	127	155	165	188	205
24	63	57	79	90	100	123	128	156	166	189	207
25	63	58	80	91	101	124	129	157	167	190	208
26	64	59	80	92	101	125	130	158	168	191	209
27	64	60	81	93	102	126	131	159	170	192	210
28	65	61	81	94	103	127	132	160	171	193	212
29	65	62	82	95	104	128	133	161	172	194	213
30	66	63	82	96	105	129	134	162	173	195	214
31	66	64	83	97	105	130	135	163	175	196	215
32	67	65	83	98	106	131	136	164	176	197	217
33	67	66	84	99	107	132	137	165	177	198	218
34	68	67	85	100	108	133	138	166	178	199	219
35	68	68	85	101	109	134	139	167	180	200	220
36	69	69	86	102	109	135	140	168	181	201	222
37	69	70	86	103	110	136	141	169	182	202	223
38	70	71	87	104	111	137	143	170	183	203	224
39	70	72	88	105	112	138	144	171	184	204	225

STANDARDIZED ANSWERS[1]

a, credit
b, no credit

1:1 *a* (3) Fishing. A boy has been fishing and he's coming home in the rain. His mother is waiting for him; he's been fishing.

a (2) There's a boy carrying a fishpole and two fish; his mother is waiting for him in the door. It's raining; the man is out in it and there's a woman at the door. A boy carrying a fishpole and two fish.

a (1) There's a boy and a woman and it's raining. A woman and a boy and a fish and some rain. A woman and a boy.

1:2 *a* (3) An accident. A man is carrying a sick girl in to her mother. She fell asleep and he's bringing her into the house. It's a hospital; the girl has been hurt and the man is bringing her in.

a (2) A woman, a man, and a girl; the man is carrying the girl.

a (1) There's a house and a man and a woman and a girl. A man and a woman and a girl.

1:3 *a* (3) A girl applying for work. She's asking for a job. She's asking to use the telephone.

a (2) An office. A library. A store with a woman behind the counter; there's a man there too.

a (1) A man, a woman, and another man, and two telephones. I see two women and a man, some books and shelves and a cupboard. Two women and a man.

1:4 *a* (3) A woman is telephoning, and she's so excited she's spilling what she was cooking.

a (2) A woman is talking over the telephone and spilling something at the same time.

a (1) There's a woman and a stove, and a telephone, and a pan, and a table. A woman and a telephone and a stove.

2: See page 19.

3: Credit reproduction of the thought regardless of the words used. Do not credit for the memories in which numbers appear, unless the numbers are exactly reproduced. Score is the number of memories correctly reproduced.

6: Credit only when syllables are repeated exactly as read.

10:1 *a* Ask somebody. Look at the sun. Look at the stars. Use a compass. (Credit last three only when examinee can explain.)
b Go the direction you came from. Wait for somebody to find you. Don't cry.

10:2 *a* Go to the next grade below. Talk with the teacher about it. Go to summer school.
b Study harder. Get the teacher to do it. Go back and get help.

10:3 *a* Go to another store. Get something else. Go home and tell your mother and find out what to do. (Credit last two only if child gives some explanation which shows that answer given actually would be the best thing to do under the conditions with which the child is familiar.)
b Go back home without them. Don't get anything.

10:4 *a* Go to work. Earn some money.
b Die. Borrow. Ask some one. Drink water. Ask your mother.

10:5 *a* Find out why you failed. Make better plans next time. Try again.

[1] This is not intended to be a complete list of the possible or probable answers. It is to serve as a guide to the examiner, to enable him to judge answers more nearly as do the other examiners using this examination. A response is to be scored as the one most nearly equal to it in value is scored.

10:6 *a* Lots of good men sometimes wear poor clothes. A man may be too poor to wear good clothes, and still be a good man.
b Rich men sometimes wear old clothes.

12:1 *a* Mind. Obey when some one asks you to do something. Do as you're told.
b Be good.

12:2 *a* You wish for something. You expect something. Hoping for something to come.
b Hoping. You hope for something.

12:3 *a* Stuck up. You think other people are common. To take pride in something and do it very carefully and well.

12:4 *a* Cultivating land. You've got a good education.

12:5 *a* You don't like a person and you try to hurt them.
b You don't like some one.

12:6 *a* Harshness. To be mean to some one.

12:7 *a* Unfounded dislike. You don't like them and you don't know anything about them.

14:1 *a* Bag busted. He lost some stuff. The bag burst. He was carrying something wet and it made a hole in the bag and he lost it.
b A hole got in the bag.

14:2 *a* The boat sunk. Shipwreck. Fell overboard. The boat upset.
b He was trying to build a bridge. He was drowned. He saw the log and went out after it.

14:3 *a* Fell in a lake. Fell in the water. Somebody sprinkled him. He was caught in a sunshower.
b It was a hot day. It rained. He fell down. He was drowned. He was sweating.

14:4 *a* She fell in the mud.
b Played in the mud and the cat scratched her. She fell through a barbed-wire fence into the mud.

14:5 *a* Car broke. Accident. Wreck. Collision. They ran into each other.
b Somebody is making a speech.

15:1 *a* He couldn't buy a house for five dollars. He didn't have enough money.
b I don't see why he'd pay for it at once.

15:2 *a* Not enough places. She lacked one place.
b She only thought she was going to have five people.

15:3 *a* He took too much money. Didn't need that much. Doesn't cost that much to ride on the street car.
b He might lose the money. He must have been going a long way if it took one hundred dollars.

15:4 *a* He ought to stay home and take care of his money. Why didn't he take his money with him so the thief couldn't get it? The thief could easily get it if he didn't stay home.
b How did he know the thief was coming? He was afraid the thief would stab him.

15:5 *a* He didn't need that many men. He had enough men.
b How could he get a thousand men at a time?

15:6 *a* He didn't have that much money. He couldn't spend that much with only a quarter.
b He had $2. He must have had them charged. He had more money.

15:7 *a* There aren't ten men, there are three men. You can't get ten men out of three men.
b There must have been more men.

15:8 *a* The electric lights would give more light than the candle.
b The lights blinded him.

16: *a* Credit plurals. Do not credit "played," "playing," "today," "yesterday," etc.

17: *a* Credit "doll" as a rhyme for "ball."

18:1 *a* All round.

18:2 *a* All shoot. All are weapons.
b All long.

18:3 *a* You can write with all of them.
b All black. All are long, like a pencil.

18:4 *a* All shine. All in the sky. All bright. All are planets.
b All round.

18:5 *a* All water. All vapor.
b All white.

18:6 *a* All hard.
b You can hurt people with all of them. All heavy.

19:1 *a* Be independent. Do things for yourself. Tend to your own business.
b When you're in a canoe, paddle it yourself.

19:2 *a* If something hurts you once, you're afraid of it afterward.
b After he's been hurt he doesn't want to play with fire again.

19:3 *a* Make the best of it and don't cry. Don't worry about it, because you can't help it.
b Don't cry before you're hurt. Somebody will wipe it up.

19:4 *a* You can't do anything big in a hurry. Some things aren't easy. Don't do things hurriedly.
b Took a long time to do it. You can't build a house or anything in a day.

19:5 *a* Don't brag till you've succeeded.
b Don't play till your work is done. You'll draw wild creatures near you. You'll scare the birds.

21: *a* Not one word may be used twice or omitted.

22: *a* 1. Four blocks. 2. Seven miles. 3. Three miles.

26:1 *a* Both round. Same shape.

26:2 *a* Both burn. The pulp of a tree is made into paper. (Credit last if child can explain that this implies that wood and paper are alike by saying, "They are made of the same thing" or other explanation equally appropriate.)
b Both are white. Both are flat. You can write on both.

26:3 *a* Both wet. Both liquid. Both run.
b You can drink both.

26:4 *a* Both articles of furniture. You can sit on both. Both have four legs.
b You can lie on both.

27: *a* Impossibilities. You can't do any of them.

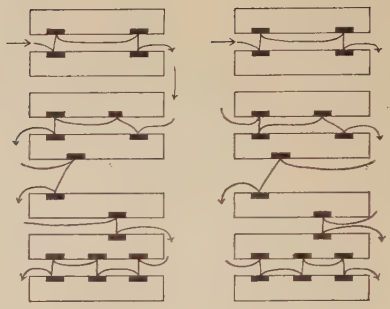
28: *a* Dirk. This one (pointing to Dirk).
b Joris. Another man. The horse.

29: *a* (5) Many metals (things, objects) are heavier than water. Many metals are able to sink. Many things are apt to sink.
a (3) Some things are heavy and will sink. Some things will not float

30: *a* Ten minutes after three.

31: *a* String, twine, cord, rope.

34: *a* Credit one point for each street which the examinee has marked as shown in this diagram. Score each street separately. Credit if examinee has marked out the shortest path *from the direction from which he entered.* Street 2 is correct only if not entered.



37: *a* ½ hr. 1¼ hrs. 1½ hrs. 3 hrs. 3¼ hrs.

38· *a*

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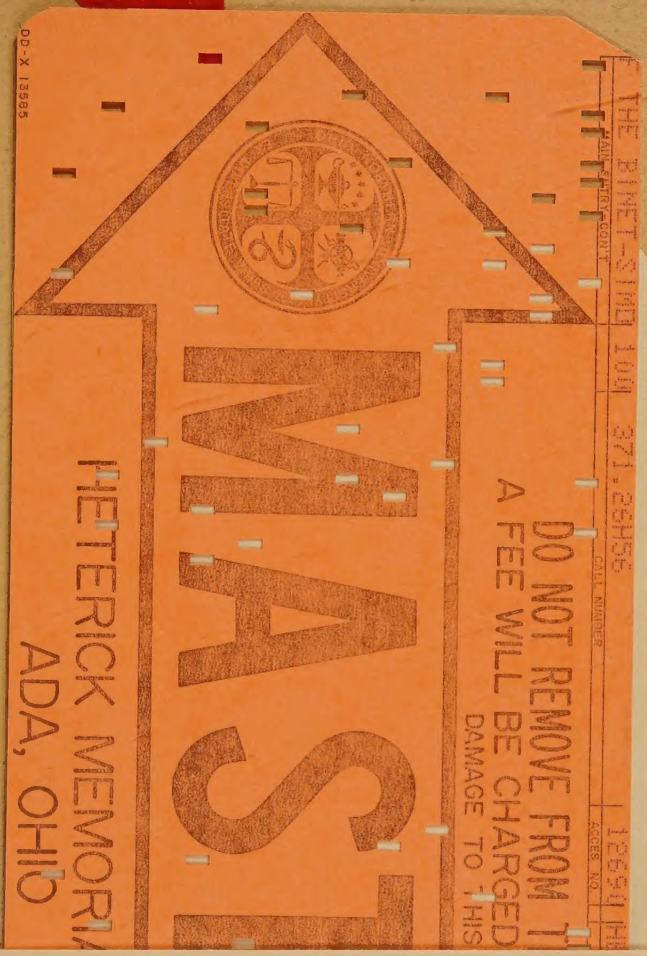

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